What is claimed is:

1. A method for measuring the amount of an analyte in a biological sample, the method comprising the steps of

a) applying the biological sample to a sample inlet port of a microsystem platform of centripetally-motivated fluid micromanipulation apparatus comprising a microsystem platform, wherein the microsystem platform comprises

i) a multiplicity of sample inlet ports, arranged concentrically around the center of the platform, wherein each of the sample inlet ports is operatively linked to

ii) a multiplicity of microchannels arrayed radially away from the center of the platform, said microchannels being operatively linked to

iii) a multiplicity of reagent reservoirs containing a reagent specific for the analyte to be measured, wherein release of the reagent from each of the reservoirs is controlled by a microvalve, and wherein the multiplicity of microchannels is also operatively linked to

iv) a multiplicity of analyte detection chambers arranged peripherally around the outer edge of the microplatform,

wherein movement of the biological sample from the sample inlet port and through the microchannel, and movement of the reagent from the reagent reservoir and through the microchannel, is motivated by centripetal force generated by rotational motion of the microsystem platform,

b) placing the microsystems platform in a micromanipulation device,

c) providing rotational motion to the microsystems platform for a time and at a velocity sufficient to motivate the biological sample containing the analyte from the sample inlet port through the microchannel,

d) opening each of the microvalves controlling release of the reagent from the reagent reservoirs by generating a signal from the controlling unit, at a time and for a duration whereby the reagent moves into the microchannel and is mixed with the biological sample,

e) observing the mixture of the biological sample and the reagent in the analyte

detection chamber, whereby a detector comprising the device detects a signal proportional to the amount of the analyte present in the biological sample, and

f) recording the measurement of the amount of the analyte in the biological sample.

2. The method of Claim 1, wherein the biological sample is blood, urine, cerebrospinal fluid, plasma, saliva, semen, or amniotic fluid.

3. The method of Claim 1, wherein the measurement of the amount of analyte in the sample is recorded in the device, on the microplatform, or both.

4. The method of Claim 1, wherein the analyte detection chamber on the microsystem platform is optically transparent.

5. The method of Claim 1, wherein the signal detected in the analyte detection chamber is detected at a frequency equal to the frequency of rotation of the platform or multiples thereof..

6. The method of Claim 1, wherein the signal detected is a monochromatic light signal.

7. The method of Claim 6, wherein the signal detected is a fluorescence signal, a chemiluminescence signal or a colorimetric signal.

8. A method for detecting gas or particles comprising an environmental sample, wherein the method comprises the steps of

contacting the environmental sample with a sample inlet port of a microsystem platform of centripetally-motivated fluid micromanipulation apparatus comprising a microsystem platform, wherein the microsystem platform comprises

i) a multiplicity of sample inlet ports, arranged concentrically around the center of the platform, wherein the sample ports comprise an air intake vent and connecting funnel channel, wherein each of the sample inlet ports is

operatively linked to

ii) a multiplicity of microchannels arrayed radially away from the center of the platform, said microchannels being operatively linked to

iii) a multiplicity of reagent reservoirs containing a reagent specific for the gas or particles to be detected, wherein release of the reagent from each of the reservoirs is controlled by a microvalve, wherein the microvalves are in electrical contact with a controller unit, and wherein the multiplicity of microchannels is also operatively linked to

iv) a multiplicity of gas or particle detectors arranged peripherally around the outer edge of the microplatform,

wherein movement of the environmental sample from the sample inlet port and through the microchannel, and movement of the reagent from the reagent reservoir and through the microchannel, is motivated by centripetal force generated by rotational motion of the microsystem platform.

b) placing the microsystems platform in a micromanipulation device,

c) providing rotational motion to the microsystems platform for a time and at a velocity sufficient to motivate the gaseous or particulate environmental sample from the sample inlet port through the microchannel,

d) opening each of the microvalves controlling release of the reagent from the reagent reservoirs by generating a signal from the controlling unit, at a time and for a duration whereby the reagent moves into the microchannel and is mixed with the environmental sample,

e) detecting the mixture of the environmental sample and the reagent or the gaseous or particulate component of the environmental sample directly in the gas or particle detection chamber, whereby the detector detects a signal proportional to the amount of the gas or particulate present in the environmental sample, and

f) recording the measurement of the amount of the gas or particulate in the environmental sample.

9. The method of Claim 8, wherein the environmental sample comprises air, water, soil,

or disrupted biological matter.

10. The method of Claim 8, wherein a gas is detected by a gas sensor chip.

11. The method of Claim 8, wherein a particle is detected in an optically-transparent particle collection chamber.

12. The method of Claim 8, wherein the particle is detected by coherent light scattering.

13. The method of Claim 8, wherein a particle is detected in a particle collection chamber operatively connected by a microchannel to a reagent reservoir comprising a reagent for chemically testing the particles, wherein the particulate is mixed and reacted with the reagent in the microchannel after release of the reagent by activation of a microvalve and rotation of the platform.

14. A method for determining a hematocrit value from a blood sample, the method comprising the steps of

a) applying the blood sample to the proximal end of a microchannel of a microsystem platform of centripetally-motivated fluid micromanipulation apparatus comprising a micromanipulation device and a microsystem platform, wherein the microsystem platform comprises

i) a radial array of microchannels having a diameter of about 100μm wherein the microchannels are treated with heparin to prevent coagulation, and wherein the microchannels are open at one end proximal to the center of the disk, the apparatus also comprising a coherent light source and a recording means operatively connected thereto comprising the micromanipulation device, and wherein movement of the blood sample through the microchannel is motivated by centripetal force generated by rotational motion of the microsystem platform,

b) placing the microsystems platform in a micromanipulation device,

c) providing rotational motion to the microsystems platform for a time and at a velocity sufficient to motivate the red blood cells comprising the blood sample to move along the extent of

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the microchannel,

d) scanning the microchannel along its length with the coherent light source,

e) detecting a change in light scatter at a position along the microchannel that defines a boundary between the red blood cells and blood plasma,

f) recording the position of the boundary for each microchannel, and

g) comparing the position of this boundary for each microchannel with a standard curve relating hematocrit values to the position of the boundary, and recording the hematocrit determined thereby.

15. A method for determining a blood oxygenation value from a blood sample, the method comprising the steps of

a) applying the blood sample to the proximal end of a microchannel of a microsystem platform of centripetally-motivated fluid micromanipulation apparatus comprising a micromanipulation device and a microsystem platform, wherein the microsystem platform comprises

i) a radial array of microchannels having a diameter of about 100μm wherein the microchannels are treated with heparin to prevent coagulation, and wherein the microchannels are open at one end proximal to the center of the disk, the apparatus also comprising a coherent light source and a recording means operatively connected thereto comprising the micromanipulation device, and wherein movement of the blood sample through the microchannel is motivated by centripetal force generated by rotational motion of the microsystem platform, and further comprising a Clarke electrode operatively connected to each of the microchannels of the microsystem platform, wherein the electrode is in contact with a blood sample within the microchannel,

b) placing the microsystems platform in a micromanipulation device,

c) providing rotational motion to the microsystems platform for a time and at a velocity sufficient to motivate the blood sample to come in contact with the Clarke electrode connected to the microchannel,

d) detecting a blood oxygenation value for he blood sample, and

e) recording the blood oxygenation value determined thereby.

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